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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,278	12/21/2001	Roger Spink	016790-0447	4914
22428	7590	03/10/2006	EXAMINER	
FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			FINEMAN, LEE A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/024,278	Applicant(s) SPINK, ROGER	
	Examiner Lee Fineman	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5-9,11-13,15-26,30-34,36-39 and 42-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-9,11-13,15-26,30-34,36-39 and 42-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/24/02 & 5/14/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 December 2005 has been entered in which claims 1, 5, 21-22, 25, 30-34, 37 and 43-45 were amended, claims 46-54 were added and claims 4, 27-28, 35 and 40-41 were cancelled. Claims 1, 3, 5-9, 11-13, 15-26, 30-34, 36-39 and 42-54 are pending.

### ***Claim Objections***

2. Claims 15-18 and 38 are objected to because of the following informalities:

Claims 15-18 include the limitation "the image signal" which lacks antecedent basis.

Claim 38 includes the limitation " further comprising a microscope comprising said main optical system." However claim 1, from which claim 38 depends, already includes the limitation "a main optical system configured to refract light emitted from a specimen into a main beam path of a microscope." Is this the same microscope or a different one? For the purposes of examination, it will be taken to be the same microscope.

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 11-13, 15-18, 25-26, 30-34, 39, 45, 50-51 and 53-54 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 33 and 34 now include the newly added limitation “wherein the generated image is an image including features not present in the specimen.” The remarks section point to specification, paragraph 0003 as evidence of this exemplary embodiment (see remarks, page 13, paragraph 4). However, paragraph 0003 of the specification in the BACKGROUND OF THE INVENTION section just discusses that it is known in the art to superimpose additional data onto a microscopic intermediate image. Nothing in the specification specifically identifies what type of data/image is superimposed in the instant invention and the applicant is now relying on this limitation as criticalness to the patentability. As such, the examiner contends, absent specific support in the specification, that this subject matter was not considered within the metes and bounds of the invention as originally filed. The dependent claims inherit the deficiencies of the claim from which they depend.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5-6, 8-9, 19, 21-24, 38 and 46-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Fantone et al., US 4,786,154.

Regarding claims 1, 22 and 38, Fantone et al. disclose in fig. 2 a device for controlling a characteristic of an image signal superimposed on a specimen image, comprising: a main optical system (12, 14) configured to refract light emitted from a specimen (10) into a main beam path (not numbered from 10 to 22) of a microscope (11); a superimposition apparatus (42) in a fixed relationship to the main optical system (fig. 2) configured to generate the image signal; a superimposing reflector (46) configured to reflect the image signal generated by the superimposition apparatus into the main beam path and to superimpose the image signal onto the specimen image (column 4, lines 24-31); an image measurement unit (38) in a fixed relationship to the main optical system (fig. 2), configured to measure at least one of a brightness, contrast and color of the specimen image (column 3, lines 6-9, in so far as the sensors (38) provide at least a video signal of the entire image, which includes measured information on the brightness and color of the image); a computing unit (within 40) adapted for at least one of global, zone-by-zone and pixel-by-pixel analysis of at least one of specimen brightness or color (column 3, lines 6-9 and lines 16-22, at least in so far as the entire image (global) or portions (zone-by-zone) are analyzed for weak fluorescence, which is a brightness); and a controller (within 40) in

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communication with the image measurement unit (fig. 2, via a control signal) is adapted to control at least one of the brightness and color of image signals generated by the superimposition apparatus (column 4, lines 17-33), wherein control is carried out on at least one of a zone-by-zone and pixel-by-pixel (column 3, lines 16-22 (zone-by-zone) or lines 27-41 (pixel-by-pixel)). The method of utilizing the structure of the claim is inherent therein.

Regarding claim 3, Fantone et al. further disclose wherein the image measurement unit (within 40) is configured to measure a spatial brightness distribution of the specimen image (column 3, lines 6-9 and 18-26).

Regarding claims 5 and 23, Fantone et al. further disclose wherein the image measurement unit is configured to measure a spatial color or contrast distribution of the specimen image (column 3, lines 27-51) and the controller is further configured to adjust one of color and contrast of the image signal (column 3, lines 27-51).

Regarding claim 6, Fantone et al. further disclose wherein the superimposition apparatus (42) is a display (column 4, line 25).

Regarding claim 8, Fantone et al. further disclose wherein the image measurement unit is configured to measure the brightness of the specimen image by measuring light emitted from the specimen and refracted by the main optical system (12, 14) into the main beam path (fig. 2).

Regarding claims 9 and 24, Fantone et al. further disclose a beam splitter (32) configured to reflect a portion of the specimen image from the main beam path to the image measurement unit.

Regarding claim 19, Fantone et al. further disclose comprising a manual input unit for providing a manual input signal from a viewer (after 22) to the controller (within 40), wherein

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the controller is configured to adjust the brightness of the image signal generated by the superimposition apparatus in response to the manual input signal and the measurement by the image measurement unit (in at least so far as there must be some manual input and therefore a manual input unit to provide input direction about the how the image is enhanced, e.g. the specified frequency stated in column 3, lines 20-21).

Regarding claim 21, Fantone et al. further disclose wherein the image measurement unit (38) is a CCD (column 2, lines 63-65).

Regarding claim 46, Fantone et al. further disclose wherein the controller (within 40) does not output the superimposed image (this is done by the superimposition apparatus, 42).

Regarding claim 47, Fantone et al. further disclose wherein the image measurement unit (within 40) outputs a measurement signal indicative of the brightness of a specimen image (column 3, lines 6-9, the digitized signal based on a video signal of the entire image, which includes measured information on the brightness of the image) and wherein the measurement signal output by image measurement unit does not include an image of the specimen or a portion of the specimen (in at least so far as a digital signal is not visual, it only includes information and therefore does not include an image (it would only include information about the image)) and wherein the control signal output by the controller does not include an image of the specimen or a portion of the specimen (again it is a digital signal which is not visual and would only include information about the image, and therefore it does not include an image).

7. Claims 11-13, 15-18, 25-26, 30-34, 39, 45 and 53-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Spink, WO96/36897.

Regarding claims 33-34 and 39, Spink discloses in fig. 3 a device for controlling a characteristic of an image superimposed on a specimen image, comprising: a microscope (fig. 3) comprising a main optical system (8) configured to refract light emitted from a specimen (22) into a main beam path (fig. 3); a superimposition apparatus (64a and 102b) in a relationship to the main optical system (fig. 3) configured to generate the image, wherein the generated image is an image including features not present in the specimen (page 4, line 28-page 5, line 15; see US 6,304,372 B1 column 3, lines 26-44 for English translation); a superimposing reflector (32a) configured to reflect the image generated by the superimposition apparatus into the main beam path and to superimpose the image onto the specimen image (fig. 3); an image measurement unit (9a) in a relationship to the main optical system (fig. 3), configured to measure a brightness of the specimen image (page 4, line 28-page 5, line 15; see US 6,304,372 B1 column 3, lines 26-44 for English translation); and a controller (104a) configured to adjust the brightness of a plurality of regions of the image generated by the superimposition apparatus in response to measurement by the image measurement unit of brightnesses of corresponding regions of the specimen image (page 4, lines 28-page 5, line 15 and page 10, lines 9-29; see US 6,304,372 B1 column 3, lines 26-44 and column 6, lines 12-37 for English translation). The method of utilizing the structure of the claim is inherent therein.

Regarding claims 11-13, 15-18, 25-26 and 31-32, Spink further discloses wherein the image measurement device is configured to measure brightness of individual regions/individual pixels of the specimen image (page 6, lines 6-22; see US 6,304,372 B1 column 4, lines 3-21 for English translation) which are in a viewer's line of sight (fig. 3); and wherein the controller (104a) is configured to adjust brightness of individual regions/individual pixel of the image



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signal generated by the superimposition apparatus in response to the measurement by the image measurement unit of the brightness of the corresponding regions/pixels of the specimen image (page 4, lines 28-page 5, line 15, page 6, lines 6-22 and page 10, lines 9-29; see US 6,304,372 B1 column 3, lines 26-44, column 4, lines 3-21 and column 6, lines 12-37 for English translation).

Regarding claim 30, Spink further discloses wherein the image measurement unit is further configured to measure one selected from the group of color and contrast and the superimposition apparatus is further configured to adjust the selected one of color and contrast (page 6, lines 6-22 and page 11, lines 23-31; see US 6,304,372 B1 column 4, lines 3-21 and column 7, lines 1-10 for English translation).

Regarding claims 45 and 53-54, Spink further discloses wherein the controller is configured to adjust brightness of substantially all individual pixels or the brightnesses of a plurality of regions of the image generated by the superimposition apparatus in response to measurements by the image measurement unit of brightness of corresponding regions/pixels of the specimen image so as to maintain substantially constant ratios of each of the brightnesses of the plurality of regions/pixels of image to each of the brightnesses of the corresponding regions/pixels of the specimen image (in so far as once the adjustment is made substantially constant ratios will be maintained and be the same).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fantone et al. in view of Shioda et al., US 6,081,371.

Fantone et al. disclose the claimed invention except wherein the image measurement unit is configured to measure the brightness of the specimen by directly measuring light emitted from the specimen and not refracted by the main optical system. Shioda et al. teaches a device (fig. 1) which controls the brightness (column 10, lines 34-42) of a superimposed image (43, fig. 3b) on a specimen image (44, fig. 3b) wherein the image measurement unit (32) is configured to measure the brightness of the specimen by directly measuring light emitted from the specimen and not refracted by the main optical system (fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the image measurement unit measure directly from the specimen and not be refracted by the main optical system as suggested by Shioda et al. to save money and simplify the system by reducing the number of parts needed.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fantone et al in view of Grund et al., US 6,217,519 B1.

Fantone et al. disclose the claimed invention except wherein the manual input unit is operable remotely from the device. Grund et al. teaches a system that combines images (fig.1, column 3, line 65-column 4, line 8) and has a manual input unit (22) that is operable remotely from the device (column 4, lines 12-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the manual input unit of Fantone et al.

operable remotely from the device as suggested by Grund et al. to provide a more flexible working area.

11. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fantone et al. in view of Marino et al., US 5,307,202.

Fantone et al. disclose the claimed invention except for explicitly stating wherein the controller is configured to automatically adjust the brightness of the image signal or automatically produce the image signal having a brightness that is controlled by the control signal. Marino et al. discloses a device for controlling a characteristic of an image signal superimposed on a specimen image (fig. 1) wherein the superimposition apparatus (11) and controller (CPU) can be automatically adjusted via software (column 2, lines 40-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the controller of Fantone et al. automatically adjust the overall brightness as suggested by Marino et al. to provide faster adjustment times.

12. Claims 42, 48-49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fantone et al. in view of Sawachika et al., US 5,485,172.

Regarding claims 48-49 and 52, Fantone et al. disclose the claimed invention except for explicitly stating image enhancement wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull or wherein the controller increases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be bright. However, Fantone et al. does disclose that

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image signal can be processed by various known methods to provide enhancement of various features of interest on the object (column 3, lines 6-15). Sawachika et al. teach image enhancement techniques wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull or wherein the controller increases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be bright (see column 4, lines 37-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make image enhancement adjustments in the system of Fantone et al. like those taught by Sawachika et al. wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull and wherein the controller increases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be bright to enable better viewing of a specific feature of interest on the object.

13. Claims 43-44, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spink in view of Sawachika et al., US 5,485,172.

Spink disclose the claimed invention except for explicitly stating image enhancements wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull or wherein the controller increases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be bright. Sawachika et al. teach image enhancement techniques wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull (see column 4, lines 37-45). It would have been

obvious to one of ordinary skill in the art at the time the invention was made to make image enhancement adjustments in the system of Spink like those taught by Sawachika et al. wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull or wherein the controller increases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be bright to enable better viewing of a specific feature of interest on the object.

### *Response to Arguments*

14. Applicant's arguments with respect to claims 33 and 34 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments filed 8 December 2005 have been fully considered but they are not persuasive.

With respect to claims 1 and 22, applicant argues that “Fantone does not teach or suggest a controller in communication with an image measurement unit, wherein control of brightness or color of an image signal generated by a superimposition apparatus is carried out on either a zone-by-zone or a pixel-by-pixel basis.” The examiner respectfully disagrees and points specifically to column 3, lines 16-22 of Fantone wherein it details adjusting portions which the examiner considers zones or column 3, lines 27-41 wherein it details adjusting pixels.

With respect to claims 46 and 47, applicant argues “any controller present in Fantone outputs the superimposed image/contains an image of at least a portion of the specimen.” The examiner respectfully disagrees and would like to point out that an image requires an optical

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output and all the controllers (of Fantone or the instant invention) output electrical, analog or digital information and therefore cannot output an image. Therefore Fantone meets the limitation as claimed.

The applicant further argues that Fantone teaches away from making a portion of the image dull to enhance that portion because the examples of image enhancement used in the reference all refer to increasing the brightness. The examiner respectfully disagrees and again points out that Fantone et al. does disclose that image signal can be processed by various known methods to provide enhancement of various features of interest on the object (column 3, lines 6-15). Therefore, Fantone does not teach away from other methods like making a portion of the image dull to enhance that portion and also would not change the principle of operation, which is to enhance the image. Further Sawachika et al. teaches this method of image enhancement as stated in the rejection above. Therefore the rejection is appropriate.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spink, US 6,304,372 B1 provides an English translation of Spink, WO96/36897; and De Forest et al., US 4,502,075 discloses a superimposition system with image enhancement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAF  
March 2, 2006

  
MARK A. ROBINSON  
PRIMARY EXAMINER